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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/813,687

03/31/2004

Patricius Aloysius Jacobus Tinnemans

081468-0308853

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06/11/2007

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EXAMINER

NGUYEN, HUNG

ART UNIT

PAPER NUMBER

2851

MAIL DATE

DELIVERY MODE

06/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/813,687

Applicant(s)

TINNEMANS ET AL.

Examiner

Hung Henry V. Nguyen

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-8 and 10-27 is/are pending in the application.
- 4a) Of the above claim(s) 11-14, 19,20 and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-10,15,18,21 and 23-27 is/are rejected.
- 7) ☒ Claim(s) 3,4,7,16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/31/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. This application contains claims 11-14, 19-20, 22 drawn to an invention nonelected with traverse in the reply filed on 12/13/2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

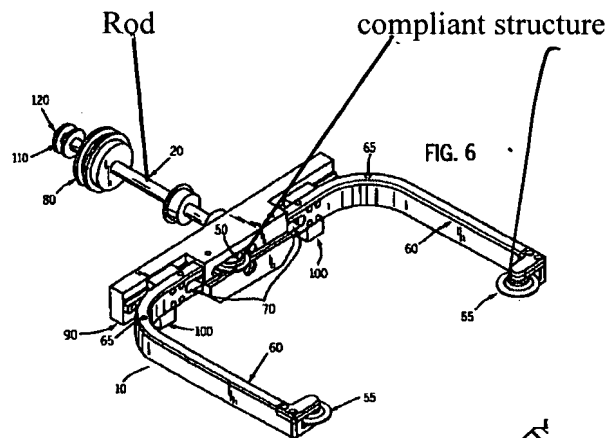
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 5-10, 15, and 26-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Hofer et al (U.S.Pat. 6,828,772).

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With respect to claims 1, 8, 15, and 26-27, Hofer et al discloses a lithographic support system (5) comprising all structures set forth in the instant claim such as: a moveable support structure (20, 60) to support and move a substrate (40) the support structure comprising a rod (20, 90) coupled a support frame that is provided with a clamp (60) for clamping the substrate (40) and a drive wheel edge assembly (50) can be regarded as a compliant structure for rotating the substrate to compensate for at least one of a tilt and displacement between the substrate (40) and the clamp (60). The compliant structure (50) is provided at least between the rod (20, 90) and the support frame (60) or on the support frame (60). As clearly illustrated from the disclosure of Hofer'772 (see figure 6A), the semiconductor wafer/object (40) is forced upward along an incline area on the wedge assemblies (50 and 55), thus one of the functions of the wedge assemblies (50 and 55) is to secure the wafer and to neutralize the effect of variations (such as the displacement) between the wafer/object and the clamp (60) (see col.6, lines 2-24). Hofer further teaches the support structure (5) comprises a robot arm (see figure 6) having a support frame (60) for holding the substrate (40) and the compliant structure (50) being provided between the rod (20, 90) and support frame (60) and the clamp is in contact with the object. (see figure 6).



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As to claim 5, Hofer et al discloses the support frame (60) comprises the compliant structure and a second compliant structure (55) provided on the clamp (60).

Regarding claim 6, Hofer et al discloses that the support frame is in a plane defined by a x-axis, and a z-axis being perpendicular to the x-axis and the y-axis, the compliant structure providing a compliance in at least one of the first rotation about the x-axis, a second rotation about the y-axis, and a z-direction parallel to the z-axis (see col.4, lines 46-67 and col.5, lines 19-50).

As to claim 7, Hofer et al discloses the compliant structure is arranged such that the support frame (60) is allowed to rotate about a predetermined center of rotation (see col.5, lines 25-30).

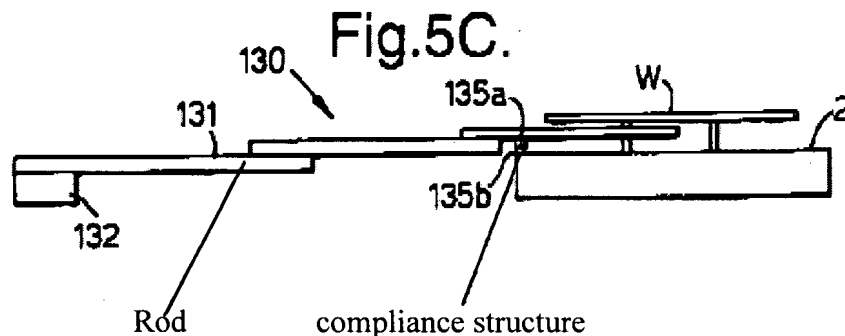
As to claim 10, Hofer et al discloses the compliant structure having a metal flexure (see figure 6A).

4. Claims 1, 5-6, 8, 10, 15, 18, 21 and 23-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Segers et al (U.S.Pat. 6,404,483).

With respect to claims 1, 15, 18, 21, 23-24 and 26 Segers et al discloses a lithographic apparatus and corresponding method (see figure 1) comprising all structures set forth in the instant claims such as: a radiation system (LA) configured to provide a beam of radiation; a support structure (MT) for supporting a patterning device (M); a substrate holder (WT) for holding a substrate (W); a projection optical system (PL) for projecting the patterned formed on the patterning device onto the substrate; and a support system for holding and moving one of the substrate, the patterning device; the support structure (see figure 5A) having a robot arm (130)

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having a rod (131) coupled to a support frame that is provided with a clamp (134) for clamping the substrate (W) and Segers teaches a compliant structure (135a) for compensating at least one of a tilt and displacement between the substrate (W) and the clamp (134) (see col.7, lines 10-25) wherein the compliance structure can be considered as being provided on the rod or the support frame (see figure 5c) so as to be contactless relationship with the object or being provided between the rod (131) and the support frame.



As to claim 5, Segers et al discloses a second compliant structure (135b) provided on the clamp.

Regarding claim 6, Segers et al discloses that the support frame is in a plane defined by a x-axis, and a z-axis being perpendicular to the x-axis and the y-axis, the compliant structure providing a compliance in at least one of the first rotation about the x-axis, a second rotation about the y-axis, and a z-direction parallel to the z-axis (see figures 5A-6B).

As to claim 7, Segers et al discloses the compliant structure is arranged such that the support frame (133) is allowed to rotate about a predetermined center of rotation (see col.7, lines 7-8).

As to claim 10, Segers et al discloses the compliant structure having a metal flexure (135a).

With respect to claim 25, the compliant structure is configured to compensate for at least one of a tilt and displacement between the object/substrate (W) and the clamp during transport of the object (W) between a pre-aligner and a substrate table, the pre-aligner and the substrate table configured to support the object (W).

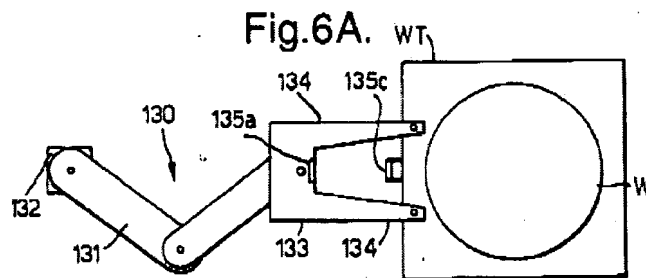
As to claim 27, it is disclosed that the clamp (134) is in contact with the substrate (W).

Response to Amendment

5. Applicant's amendment filed 3/13/2007 has been entered. Claims 1, 3, 4, 15-18, 21 have been amended. Newly claims 23-27 have been added. In response to Examiner's reasons for allowable subject matters, applicant submits that "no one element or limitation in particular should be deemed to impart to or be required of the claims". The Examiner would like to invite the applicant to re-visit section 7 of the previous office action. Therein it is stated that the prior art of record either alone or in combination, neither discloses nor makes obvious the combination of a lithographic support system comprising among other features, a compliant structure having specified structures for compensating at least a tilt and displacement between the object and the clamp, as recited in the mentioned claims of the present application. The Examiner believed that the comments do accurately represent the actual claim language. The applicant should clearly out point out the language in the Examiner's comments that the applicant considered to be incorrect if the applicant are aware of such language.

Turning now to the prior art rejections, claims 1, 15, 18 and 21 have been amended to recite "the compliant structure being provided *at least between the rod and the support frame*"; then Applicant argued that the cited references fail to teach the above mentioned features. In

order to support the applicant's position, the applicant refers to figures 3a, 3b and paragraph 0072. In the Examiner's opinion, in figures 3a and 3b of the present application, the compliant is positioned between the rod (12), the intermediate part (16) and the support frame (18). Similarity, in the broadest sense, the compliant structure (50) in the reference of Hofer can be considered to be positioned between the rod (20) and the frame (60) and in the reference of Segers, the compliant (135a) can be considered to be located between the rod (131) and the frame (133,134). Therefore, Hofer and Segers meet the claimed limitations as recited in the independent claims of the present application.



With respect to the dependent claims, the applicant merely states that they are patentable by virtue of dependency but does not separately argue the distinct patentability of these claims. Therefore, it is believed that they are not additionally patentable over and above the patentability of the independent claims.

With respect to the newly added claims, their claimed subject matters have been carefully considered but have been rejected as set forth above.

Allowable Subject Matter

6. Claims 3-4, 7 and 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V. Nguyen whose telephone number is 571-272-2124. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on 571-272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

hvn
5/20/07

HENRY HUNG NGUYEN
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read 'H. Nguyen', with a long horizontal flourish extending to the right.